

Listing of Claims

The following listing of claims replaces all previous listings or versions thereof:

1. (Cancelled)

2. (Currently amended) The isolated peptide of claim 4 or method of claim 7, wherein the isolated peptide inhibits aminopeptidase A activity.

3. (Cancelled)

4. (Previously presented) An isolated peptide of 50 amino acids or less that selectively binds aminopeptidase A, wherein the isolated peptide comprises a peptide sequence selected from the group consisting of SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:5 and SEQ ID NO:6.

5. – 6. (Cancelled)

7. (Currently amended) A method of manufacturing an An-isolated peptide of 50 amino acids or less that selectively binds aminopeptidase A (APA), the method comprising the steps of:

a) wherein the isolated peptide is operatively coupled to a therapeutic agent determining a peptide sequence by a process comprising:

i) contacting a cell or tissue expressing APA with peptides comprising a plurality of heterologous peptide sequences;

ii) removing peptides that do not bind to the cell or tissue expressing APA;

iii) isolating one or more peptides that binds the cell or tissue expressing APA;

iv) testing the one or more peptides to confirm that it binds APA; and

v) determining the sequence of said one or more peptides; and

b) manufacturing a peptide comprising the determined sequence.

8. (Currently amended) ~~The An-isolated peptide of claim 4 or method of claim 7 that selectively binds aminopeptidase A, wherein the isolated peptide is covalently operatively coupled to a therapeutic agent.~~

9. (Currently amended) The isolated peptide of ~~claim 7 or claim 8 or method of claim 8~~, wherein said therapeutic agent is a drug, a chemotherapeutic agent, a radioisotope, a pro-apoptosis agent, an anti-angiogenic agent, a hormone, a cytokine, a cytotoxic agent, a cytoidal agent, a cytostatic agent, a peptide, a protein, an antibiotic, an antibody, a Fab fragment of an antibody, a hormone antagonist, a nucleic acid or an antigen.

10. (Withdrawn; currently amended) The isolated peptide of ~~claim 9 or method of claim 9~~, wherein the anti-angiogenic agent is selected from the group consisting of thrombospondin, angiostatin5, pigment epithelium-derived factor, angiotensin, laminin peptides, fibronectin peptides, plasminogen activator inhibitors, tissue metalloproteinase inhibitors, interferons, interleukin 12, platelet factor 4, IP-10, Gro- β , thrombospondin, 2-methoxyestradiol, proliferin-related protein, carboxiamidotriazole, CM101, Marimastat, pentosan polysulphate, angiopoietin 2 (Regeneron), interferon-alpha, herbimycin A, PNU145156E, 16K prolactin fragment, Linomide, thalidomide, pentoxifylline, genistein, TNP-470, endostatin, paclitaxel, Docetaxel, polyamines, a proteasome inhibitor, a kinase inhibitor, a signaling peptide, accutin, cidofovir, vincristine, bleomycin, AGM-1470, platelet factor 4 and minocycline.

11. (Withdrawn; currently amended) The isolated peptide of ~~claim 9 or method of claim 9~~, wherein said pro-apoptosis agent is selected from the group consisting of etoposide, ceramide sphingomyelin, Bax, Bid, Bik, Bad, caspase-3, caspase-8, caspase-9, fas, fas ligand, fadd, fap-1, tradd, fas, rip, reaper, apoptin, interleukin-2 converting enzyme or annexin V.

12. (Withdrawn; currently amended) The isolated peptide of ~~claim 9 or method of claim 9~~, wherein said cytokine is selected from the group consisting of interleukin 1 (IL-1), IL-2, IL-5, IL-10, IL-11, IL-12, IL-18, interferon- γ (IF- γ), IF- α , IF- β , tumor necrosis factor- α (TNF- α), or GM-CSF (granulocyte macrophage colony stimulating factor).

13. (Withdrawn) An isolated peptide that selectively binds aminopeptidase A, wherein said peptide is attached to a molecular complex.

14. (Withdrawn) The isolated peptide of claim 13, wherein said complex is a virus, a bacteriophage, a bacterium, a liposome, a microparticle, a magnetic bead, a yeast cell, a mammalian cell or a cell.

15. (Withdrawn) The isolated peptide of claim 14, wherein said complex is a virus or a bacteriophage.

16. (Withdrawn) The isolated peptide of claim 15, wherein said virus is chosen from the group consisting of adenovirus, retrovirus and adeno-associated virus.

17. (Withdrawn) The isolated peptide of claim 15, wherein said virus is further defined as containing a gene therapy vector.

18. (Withdrawn) The isolated peptide of claim 14, wherein said peptide is attached to a eukaryotic expression vector.

19. (Withdrawn) The isolated peptide of claim 18, wherein said vector is a gene therapy vector.

20. (Cancelled)

21. (Currently amended) ~~The pharmaceutical composition of claim 20, wherein the peptide is the peptide of~~ A pharmaceutical composition comprising a peptide in accordance with claim 4.

22. – 47. (Cancelled)

48. (Currently amended) ~~The method of claim 7, wherein the peptide sequence is determined by a process~~ A method for identifying a peptide that selectively binds aminopeptidase A comprising:

- a) contacting a cell or tissue expressing APA with a plurality of phage, wherein each phage comprises heterologous peptide sequences incorporated into a fiber protein;
- b) removing the phage that do not bind to the cell or tissue expressing APA;
- c) isolating the phage that bind the cell or tissue expressing APA; and
- d) testing the heterologous peptide of said phage to confirm that it binds APA; and

e) determining the sequence of a peptide confirmed in step d).

49. (Previously presented) The method of claim 48, wherein the method is repeated at least twice.

50. (Previously presented) The method of claim 48, further comprising isolating and sequencing the isolated phage nucleic acid.

51. (Previously presented) The method of claim 48, wherein APA expression is endogenous.

52. (Previously presented) The method of claim 48, wherein APA expression is exogenous.

53. (Withdrawn) An antibody that binds a peptide in accordance with claim 4.

54. (Withdrawn) A method of inhibiting viral attachment to a cell comprising contacting the cell with an effective amount of a) a peptide in accordance with claim 4, 2) an antibody that binds APA, or c) an antibody in accordance with claim 53.

55. (Withdrawn) The method of claim 54, wherein the cell is in a human and the peptide or antibody is administered to said human.

56. – 63. (Cancelled)

64. (Currently amended) The isolated peptide of claim 4, [[7 or 8,]] wherein the isolated peptide comprises SEQ ID NO:1.

65. (Withdrawn; currently amended) The isolated peptide of claim 4, [[7 or 8,]] wherein the isolated peptide comprises SEQ ID NO:2.

66. (Withdrawn; currently amended) The isolated peptide of claim 4, [[7 or 8,]] wherein the isolated peptide comprises SEQ ID NO:3.

67. (Withdrawn; currently amended) The isolated peptide of claim 4, [[7 or 8,]] wherein the isolated peptide comprises SEQ ID NO:4.

68. (Withdrawn; currently amended) The isolated peptide of claim 4, [[7 or 8,]] wherein the isolated peptide comprises SEQ ID NO:5.

69. (Withdrawn; currently amended) The isolated peptide of claim 4, [[7 or 8,]] wherein the isolated peptide comprises SEQ ID NO:6.

70. (New) The isolated peptide of claim 4, wherein the peptide is 30 amino acids or less in length.

71. (New) The isolated peptide of claim 70, wherein the peptide is 20 amino acids or less in length.

72. (New) The isolated peptide of claim 68, wherein the peptide is 20 amino acids or less in length.

73. (New) The isolated peptide of claim 72, wherein the peptide is 10 amino acids or less in length.

74. (New) The method of claim 8, wherein the peptide is 30 amino acids or less in length.

75. (New) The method of claim 74, wherein the peptide is 20 amino acids or less in length.

76. (New) The method of claim 75, wherein the peptide is 10 amino acids or less in length.